

REMARKS

Claims 4-7 are pending in the application with claim 4 being the independent claim. By this amendment, Applicants seek to amend claim 4. Support for the amendment to claim 4 may be found in the specification at page 7, lines 5-7.

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 4-7 in condition for allowance. The proposed amendment of claim 4 does not raise new issues and therefore, this Amendment should allow for immediate action by the Examiner. Further, entry of the Amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

Rejections under 35 U.S.C. § 103

Claims 4-7 are patentable over the combinations of references cited by the Examiner because the references fail to establish a *prima facie* case of obviousness. Claim 4 is directed to a plasma processing apparatus for carrying out a process with plasma generated by using an electromagnetic wave. The apparatus includes a component made of glass, which is transparent to the electromagnetic wave and is used for introducing the electromagnetic wave into a chamber in which the plasma is generated. The apparatus also includes a cover component including a plurality of openings, into which the glass component is fitted, and an antenna fixed to the cover component. The glass includes a first glass phase consisting essentially of Si and O, and a second glass phase consisting essentially of Si, Al, and O. The second glass phase has 0.1-10 parts aluminum-containing oxide powder added to 100 parts quartz

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powder. The first glass phase is substantially evenly dispersed in the second glass phase.

Suzuki *et al.* in view of Nagahama *et al.*

Claims 4-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,497,783 to Suzuki *et al.* (Suzuki) in view of JP 11-228172 to Nagahama *et al.* (Nagahama). The Examiner relies upon Suzuki for an asserted disclosure of a plasma processing apparatus and upon Nagahama for an asserted disclosure of a glass. Suzuki discloses a plasma processing apparatus having an applicator 3 with circular waveguides 3a having an H-plane 3c with a plurality of slots 3b provided apart from each other. Microwaves radiated through the slots 3b are transmitted through a dielectric window 4 below the microwave applicator 3. See Suzuki, column 6, line 55-column 7, line 7.

Nagahama discloses a plasma corrosion resistant glass. The glass includes an aluminum-oxide layer on the glass front face. See Nagahama, paragraph 16. The glass may be used on a semi-conductor production device. See Nagahama, abstract.

However, neither Suzuki nor Nagahama, alone or in combination, teaches or suggests all the features recited in proposed claim 4. Proposed claim 4 recites that "the first glass phase is substantially evenly dispersed in the second glass phase."

Nagahama does not teach or suggest such a feature. Instead, Nagahama discloses that an aluminum-oxide layer is formed on the glass front face. An aluminum-oxide layer formed on the glass front face is not evenly dispersed in a second glass phase, as recited in the claims.

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Suzuki also fails to teach or suggest a first glass phase substantially evenly dispersed in a second glass phase. Because neither Suzuki nor Nagahama teaches or suggests all the features of proposed claim 4, it is patentable over this combination of references.

Claims 5-7 depend from and add additional features to proposed independent claim 4. Accordingly, these claims are patentable for at least the reasons set forth above with regard to proposed claim 4. Applicants respectfully request that the Examiner remove this rejection.

Suzuki in view of Rittler and Prochazka

Claims 4-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Suzuki in view of U.S. Patent No. 4,009,042 to Rittler and U.S. Patent No. 4,266,978 to Prochazka. However, the combination Suzuki, Rittler, and Prochazka does not teach or suggest all the features of proposed claim 4. As stated above, Suzuki does not teach or suggest a first glass phase substantially evenly dispersed in a second glass phase. Rittler and Prochazka do not cure this deficiency. Rittler discloses a transparent, infra-red transmitting glass ceramic, useful for cookingware. The cookingware is a glass-ceramic comprising 50-65% quartz (SiO_2) and 20-30% alumina (Al_2O_3). See Rittler, claim 1, abstract; see *also* Office Action, page 5. Prochazka teaches a synthesis of mixed oxide composition including an oxide mixture of mullite. See Prochazka, column 2, lines 47-49.

The combination of Suzuki, Rittler, and Prochazka do not teach or suggest that "the first glass phase is substantially evenly dispersed in the second glass phase," as recited in proposed claim 4. Because none of the cited references teach or suggest this

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feature, proposed claim 4 is patentable over this combination of references. Applicants respectfully request that the Examiner withdraw the rejection.

Further, there is no suggestion or motivation in the references or in the knowledge available to one of ordinary skill in the art, to combine reference teachings. The Examiner suggests that the cookingware of Rittler is an art recognized equivalent of a microwave transmitting window in a plasma processing device. Applicants traverse this assertion. A person skilled in the semi-conductor arts would not look to the cookingware arts for disclosure on a window for a plasma treatment apparatus. Further, there is no suggestion or motivation in the references themselves to use cookingware glass in a plasma processing device. Accordingly, there is no suggestion or motivation for combining Rittler with Suzuki or Prochazka.

Finally, even if there was a motivation to combine the references, the Examiner's assertion that it would be obvious to optimize the glass of Rittler having 50-65% quartz and 20-30% alumina to have 0.1-10 parts aluminum-containing oxide powder added to 100 parts quartz powder is completely unfounded. The values recited in claim 4 fall well outside the range provided in Rittler. As such, they are not merely optimizing the values of Rittler. Instead, they are providing a different composition for a different purpose. Proposed claim 4 is patentable over this combination.

Claims 5-7 depend from and add additional features to proposed independent claim 4. Accordingly, these claims are patentable for at least the reasons set forth above with regard to proposed claim 4. Applicants respectfully request that the Examiner remove this rejection.

Conclusion

In view of the foregoing remarks, the claimed invention is patentable over the cited combinations of references. Applicants therefore request entry of this Amendment and allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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